



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/842,827	04/17/1997	DAVID W. LEUNG	077319/0125	5646

7590 06/20/2005

FOLEY AND LARDNER  
SUITE 500  
3000 K STREET NW  
PO BOX 25696  
WASHINGTON, DC 200078696

EXAMINER

PROUTY, REBECCA E

ART UNIT	PAPER NUMBER
----------	--------------

1652

DATE MAILED: 06/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 08/842,827	<b>Applicant(s)</b> LEUNG ET AL.	
	<b>Examiner</b> Rebecca E. Prouty	<b>Art Unit</b> 1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2, 14 and 15 is/are allowed.
- 6) ☒ Claim(s) 3, 5 and 10-13 is/are rejected.
- 7) ☒ Claim(s) 1, 4, 6-9 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/97</u> . | 6) <input type="checkbox"/> Other: ____.  |

Art Unit: 1652

The instant application was suspended by the Office pending declaration of an interference. However, the Board of Patent Appeals and Interferences has decided not to declare an interference at this time. Therefore, *ex parte* prosecution is resumed. Claims 1-16 are pending.

Claim 1 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 14. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

The only difference in Claim 1 and 14 is that Claim 1 specifically recites that the encoded protein is human phosphatidic acid phosphatase. However, this is an inherent property of the protein of SEQ ID NO:2 so this additional language is not further limiting of Claim 1.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1652

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3, 5 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kai et al. (Reference A7 of applicants IDS) in view of any one of GENBANK entries AA040858, W04968 or H68363.

Kai et al. teach the isolation of porcine PAP and the isolation of and expression of the mouse PAP gene.

Each of GENBANK entries W04968, H68363, and AA040858 disclose a fragment of human cDNA which comprises a sequence highly homologous to a portion of the sequence of the mouse PAP gene disclosed by Kai et al. It is well known in the art that each EST corresponds to the production of some protein as ESTs are fragments of cDNAs which are produced by reverse transcription from mRNAs of a particular cell type. Only expressed proteins have corresponding mRNAs in a cell and thus each EST corresponds to an expressed protein. While a EST encodes only a portion of the cDNA encoding a particular protein, each EST clearly provides a suggestion that the cell

Art Unit: 1652

from which the EST was reverse transcribed expressed a corresponding protein. The high homology of the cited ESTs to the mouse PAP gene disclosed by Kai et al. clearly suggests that the protein to which each of these ESTs correspond is the human homolog of the protein of Kai et al. As such it would have been obvious to one of ordinary skill in the art that there is a human homolog of the PAP of Kai et al. which is highly homologous to the mouse and porcine proteins.

Therefore, as Kai et al. teach that type 2 PAPs such as that encoded by the disclosed gene play a role in the regulation of signal transduction by phospholipase D, it would have been obvious to one of ordinary skill in the art to isolate the gene encoding the human homolog of the porcine and mouse PAPs disclosed by Kai et al., to recombinantly express this gene to produce the human PAP and to use this enzyme for the dephosphorylation of phosphatidic acid and the regulation of signal transduction.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kai et al. (Reference A7 of applicants IDS) in view of any one of GENBANK entries AA040858, W04968 or H68363 as applied to claims 3, 5, and 10-12 above, and further in view of Brindley et al. (Reference A1 of applicants IDS).

Art Unit: 1652

Kai et al., AA040858, W04968 and H68363 are discussed above.

Brindley et al. teach that mammalian type 2 PAPs dephosphorylate phosphatidic acid, lysophosphatidic acid, sphingosine-1-phosphate and ceramide-1-phosphate to generate products important in signal transduction pathways.

Therefore, as Kai et al. and Brindley teach that type 2 PAPs such as that encoded by the disclosed gene play a role in the regulation of signal transduction by phospholipase D and other proteins, it would have been obvious to one of ordinary skill in the art to isolate the human homolog of the porcine and mouse PAPs disclosed and to use this enzyme for the dephosphorylation of lysophosphatidic acid, sphingosine-1-phosphate and ceramide-1-phosphate and the regulation of signal transduction.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over GENBANK entry U79294 in view of Kai et al. (Reference A7 of applicants IDS).

GENBANK entry U79294 teaches a cDNA sequence from a human brain library. This cDNA is identical to bases 225-1362 of SEQ ID NO:6 except for a single base deletion encompassing all of the coding sequence of SEQ ID NO:5. This cDNA also exhibits 62% sequence identity with the mouse cDNA encoding PAP of Kai et al.

Art Unit: 1652

Kai et al. teach the isolation of porcine PAP, the isolation of and expression of the mouse PAP gene and that PAPs are important enzymes glycerolipid biosynthesis as well as signal transduction pathways.

In view of the sequence identity between the cDNA of GENBANK entry U79294 and the mouse PAP cDNA of Kai et al, it would have been obvious to one of ordinary skill in the art that the cDNA disclosed by GENBANK entry U79294 encodes a human PAP-like protein. Therefore, it would have been obvious to one of ordinary skill in the art to insert the cDNA of GENBANK entry U79294 into an expression vector and express the encoded protein in order to produce antibodies to a human protein that would be reasonably expected to have a role in glycerolipid biosynthesis and/or signal transduction pathways.

Claims 4, 6-9, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 2, 14, and 15 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rebecca E. Prouty whose telephone number is 571-272-0937. The examiner can normally be reached on Tuesday-Friday from 8 AM to 5 PM. The examiner can also be reached on alternate Mondays

Art Unit: 1652

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapura Achutamurthy, can be reached at (571) 272-0928. The fax phone number for this Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Rebecca Prouty', with a stylized flourish at the end.

Rebecca Prouty  
Primary Examiner  
Art Unit 1652